

IN THE SPECIFICATION:

Please amend paragraph [0040], as follows.

--[0040] Fig. 4 illustrates incidence angle characteristics in terms of reflectances  $R_p$  and transmittances  $T_p$  when p-polarized light (the direction of vibration of the electrical field is perpendicular to a light-incident surface) having wavelengths in the visible range impinges upon the polarization separation element 1 of the first embodiment. Fig. 5 illustrates incidence angle characteristics in terms of reflectances  $R_s$  and transmittances  $T_s$  when s-polarized light (the direction of vibration of the electrical field is parallel to the light-incident surface) having wavelengths in the visible range impinges upon the polarization separation element 1 of the first embodiment. In Figs. 4 and 5,  $T_p$  and  $T_s$  also represent transmittance curves for the p-polarized light and s-polarized light, respectively; and  $R_p$  and  $R_s$  denote reflectance curves for the p-polarized light and s-polarized light, respectively. In the other embodiments described later, the graphs are labeled in the same way.--

Please amend paragraph [0044], as follows.

--[0044] A description of a second embodiment of the present invention will now be given.--

Please amend paragraph [0067], as follows.

--[0067] By disposing the diffraction grating 5 between the Al diffraction grating 4 and a quartz substrate or an  $\text{MgF}_2$  film, the polarization separation element is more durable at high temperatures. In addition, by adhering the diffraction gratings 4 and 5 to the prisms 11 through the spacer 8 so as to protect the diffraction gratings 4 and 5 and by filling the hermetically sealed space with an inert gas, it is possible to restrict corrosion of the diffraction gratings, caused by, for example, oxidation or moisture in the air, and breakage of the diffraction gratings 4 and 5 due to handling of the polarization separation element. Therefore, the prisms with the polarization separation element ~~is~~ are highly durable and ~~is~~ are easy to handle.--

Please amend paragraph [0070], as follows.

--[0070] ~~The~~ The Described above are embodiments of the polarization separation elements and the embodiment of the optical apparatus using any of the polarization separation elements ~~of the present invention are described~~. According to each of the embodiments, by disposing diffraction gratings formed of a plurality of metals or metallic compounds and having periods that are shorter than wavelengths used, good polarization separation characteristics are achieved in the entire wavelength region used and angle-of-view region used. In addition, by disposing between an aluminum diffraction grating and a substrate a metal or a metallic compound having a higher melting point than aluminum or having a small diffusion coefficient with respect to the substrate or having good adhesiveness with respect to the substrate, the polarization separation element is more

durable at high temperatures. Therefore, in a liquid crystal projector or the like, it is possible to realize an optical system having high contrast and high luminance.--